AREA OF FOCUS #2

Obesity

Obesity and overweight represent the most common nutritional problem in the United States, affecting more than one-half of the adult population, an estimated 97 million Americans.

Obesity is a major contributor to diabetes, hypertension, heart disease, stroke, osteoarthritis, and certain cancers.

Obesity is more common among minority individuals in the United States. More than 65 percent of African-American and Mexican-American women are overweight as defined by a body mass index (BMI) above 25.

The prevalence of obesity (BMI above 30) in the United States is increasing in all racial and ethnic groups, but affects minority populations disproportionately. More than 10 percent of non-Hispanic black women age 40 to 60 are severely obese, with BMIs over 40.

Rates of obesity in children and adolescents increased by 80 percent from 1980 to 1994 in the United States.

Rates of obesity in American Indian children are more than twice as high as in the Nation's population as a whole.

Obesity in childhood is associated with higher cholesterol levels and higher rates of hypertension, type 2 diabetes, and early coronary heart disease.

Currently, there are no approved medications for treatment of childhood obesity. Low calorie diets, behavior modification, and exercise are the mainstays of treatment, but have had limited success in the past.

Obesity is an important area of research supported by NIDDK, including basic research on appetite, satiety, energy expenditure, and genes that affect body weight, as well as clinical research on means of treating and preventing obesity.

Research Goal 1

To understand the biologic basis of the development of obesity

Current Activities

A major part of NIDDK's portfolio in obesity relates to understanding the fundamental biologic basis for appetite, satiety, and energy expenditure. Most promising has been the recent identification of obesity genes and the various hormones, receptors, and intracellular signals that are important in appetite, satiety, and energy expenditure. These basic research studies are important for all racial and ethnic groups that suffer from obesity. However, some of these studies, particularly those on the inheritance of obesity and search for genes conferring susceptibility to obesity, focus in particular on certain minority populations. NIDDK supports several large R01 grants in genetic and family studies of obesity in African Americans, Hispanic Americans, and American Indians.



Potential New Initiative

Expand the research portfolio on genetic studies of obesity in minority populations through special emphasis funding and support of ancillary studies to clinical research protocols focusing on the genetics of obesity in minorities.

Expected Outcome

Enhanced understanding of genes conferring susceptibility to obesity in minority populations.

Action Plan

(1) Request support for grants above the pay line in this area; (2) provide supplements to existing R01s; and (3) support a workshop to discuss development of a consortium to pool genetic research data on obesity.

Research Goal 2

To develop the means of treating obesity and distribute sound, scientifically based information on therapy for obesity

Current Activities

NIDDK supports several clinical trials on treatment of obesity, including studies of behavioral therapy and management of binge eating. Of major importance is the recently initiated multicenter clinical trial, Look AHEAD (formerly the Study of Health Outcomes of Weight Loss (SHOW) trial). The trial is designed to determine if interventions to produce sustained weight loss lead to improved health in obese persons with diabetes. Participants from minority populations are being actively recruited to ensure that trial participants represent the U.S. population with diabetes and that the results of the trial are applicable to minority populations.

Potential New Initiatives

 At the start of the Look AHEAD trial, focus attention on recruitment and retention of minority individuals.

Expected Outcome

Enhanced recruitment and retention of individuals from minority populations in Look AHEAD.

Action Plan

Add supplements to Look AHEAD U01s to facilitate recruitment and retention efforts to ensure adequate representation and retention.

 Add ancillary studies to the Look AHEAD trial that focus on differences in response rates to various interventions by different racial/ ethnic groups.

Expected Outcome

Funding of new studies to investigate ethnic/racial differences in obesity pathophysiology, comorbidities, and response to weight-loss interventions.

Action Plan

Mechanism of funding will be by an RFA released in FY 2000.

3. Promote further pilot studies of treatment of obesity through the R03 planning grant mechanism.

Expected Outcome

New full-scale clinical trials for the treatment of obesity.

Action Plan

Mechanism of funding will be by an ongoing PA-98-071: Small Grants in Digestive and Nutritional Disorders.

Research Goal 3

To develop the means of preventing obesity in minority populations, including children

Current Activities

Existing Clinical Nutrition Research Units (CNRU) and Obesity-Nutrition Research Centers (ONRC) funded by NIDDK support various activities aimed at understanding and treating the causes and negative health effects of obesity in minority populations. Examples of these activities include pilot and feasibility studies to evaluate metabolic rate differences between Caucasian and African-American women and differences in weight gain during pregnancy among Caucasian, African-American, and Hispanic women; surveys of eating and exercise habits of women on the Lakota Indian reservation and of American-Indian women in urban areas; and several activities in the Boston area to address the issue of obesity among African-American women in the city.

A protocol for the use of the drug metformin in a sub-set of young children with obesity has been written. Children 5 years of age and older are screened every 2 years for the development of diabetes. Efforts are underway to develop screening tests for diabetes that can be done in schools. Community prevention programs to encourage breastfeeding, which is likely to reduce obesity and thus type 2 diabetes, are underway. Programs to educate elementary school students with regard to nutrition, exercise, and diabetes are ongoing.

Potential New Initiatives

1. Organize community lifestyle programs to encourage exercise and changes in diet.

Protocols for obesity prevention with use of medication can be extended to evaluate their use as agents to prevent type 2 diabetes in children. Use of these agents will also be selectively evaluated in those children identified as particularly highrisk for type 2 diabetes. Behavioral modification protocols to understand and encourage increase in exercise and decrease in the amount of calorie intake can be developed.

Expected Outcome

If successful, these initiatives will reduce the increasing rate of obesity and type 2 diabetes among racial and ethnic minority children through lifestyle and behavior changes, with possible addition of certain medications.

Action Plan

These programs will be developed with intramural funds in cooperation with the American Indian community.

 Convene a workshop in FY 2001 to strengthen research capabilities in obesity prevention and to focus on opportunities for full-scale obesity prevention studies.

This workshop will build on the FY 1999 trans-NIH RFA DK-99-010: Innovative Approaches to Prevention of Obesity.

Expected Outcome

Better methods of preventing the onset of obesity.

Action Plan

Convene workshop.

3. Use the recommendations of the workshop from initiative 2 to issue an RFA for full-scale clinical trials for prevention of obesity, emphasizing high-risk populations.

Expected Outcome

Better methods of preventing the onset of obesity.

Action Plan

Issue RFA for clinical trials.

4. Conduct research on modification of environmental factors affecting obesity.

The National Task Force on Prevention and Treatment of Obesity has identified modification of environmental factors affecting obesity as an under-funded area of research that holds great potential for preventing obesity.

Expected Outcome

Better methods of preventing the onset of obesity.

Action Plan

NIDDK is exploring the possibility of a trans-NIH RFA in this area.

5. Investigate the role of physical activity in health and obesity.

Expected Outcome

Increased number and quality of investigatorinitiated applications in the area of physical activity in preventing and treating obesity.

Action Plan

The NIH Nutrition Coordinating Committee developed a trans-NIH PA entitled "Role of Physical Activity in Health and Obesity."

Public Information and Outreach Goal

To further encourage groups who are disproportionately impacted by obesity and overweight, particularly African-American women, to maintain a healthy weight by becoming more physically active and eating healthier foods

Current Activities

Approximately 55 percent of the adult population, or 97 million people, are defined as either overweight or obese according to recent data from the first Federal guidelines to identify, evaluate, and treat overweight and obesity. Nearly 4.7 million American children are also classified as obese or overweight.

Overweight occurs disproportionately in people who are of African American, Mexican American, American Indian, and Native Hawaiian descent. Obesity is a known risk factor for diabetes, heart disease, high blood pressure, gallbladder disease, and some forms of cancer, and the prevalence of obesity is rising.

NIDDK's Weight-control Information Network (WIN) provides culturally appropriate, evidence-based information about obesity, weight control, physical activity, and childhood obesity to the general public, health care providers, the media, and the Congress.

WIN developed the *Sisters Together: Move More*, *Eat Better Program* for African-American women because data from the Third National Health and Nutrition Examination Survey (NHANES III) indicated that they have the highest rates of obesity and overweight among all racial and ethnic groups in the United States. This 3-year (1995-1998) pilot communication program for Boston-based African-American women 18 to 35 years of age used a variety of tools such as walking groups, cooking demonstrations, and health and body image seminars to communicate and motivate these women to move more and eat better.

Potential New Initiative

WIN will plan and implement a nationwide, media-based *Sisters Together: Move More, Eat Better Program* for African-American women via communications media aimed at this audience. WIN will establish a partnership that includes other agencies and organizations with similar objectives.

Action Plan

- Develop media outreach.
- Create a Sisters Together Work Group.
- Develop, print, and disseminate Sisters Together materials for African-American women and health care providers.
- ◆ Plan kick-off events.
- Establish toll-free phone line for the Program to handle information requests.